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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,165	08/01/2006	Richard Hamilton Archer	DAIRY88.014APC	5898
20995 7590 03/17/2010 KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614				
EXAMINER				
BADR, HAMID R				
ART UNIT		PAPER NUMBER		
1794				
NOTIFICATION DATE		DELIVERY MODE		
03/17/2010		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/563,165

Applicant(s)

ARCHER ET AL.

Examiner

HAMID R. BADR

Art Unit

1794

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 14-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 14-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date 2/12/2010
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Applicants' amendment filed 12/17/2009 is acknowledged.

Rejection of claims 1-25 under 35 U.S.C. 103(a) is withdrawn per applicants amendments.

New ground of rejections is set forth below.

Claims 1-11 and 14-25 are being considered on the merits.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-11, and 14-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 1 and 2 are indefinite for "cheesemaking mixture or product". The phrase "cheesemaking mixture" is not defined by the claims nor is it clear from the specification what kind of mixture it can be. It is unclear what is meant by "cheesemaking mixture". Furthermore, it is unclear what is encompassed by the term "or product", and how this would differ from a "cheesemaking mixture".

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-11 and 14-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schwartz et al. (EP 071 380; hereinafter R1) in view of Briczinski et al. (2002, Production of an exopolysaccharide containing whey protein concentrate by fermentation of whey; hereinafter R2) and Bodor et al. (US 6,217,917; hereinafter R3)

6. R1 discloses a process for preparing functionalized whey products. (Abstract). R1 discloses that it is possible to obtain whey products that may serve the function of a stabilizer, thickener, emulsifier or flavor enhancer. (page 1, lines 30-32). R1 discloses that the process wherein an ultra-filtered and hydrolyzed whey medium fermented with *Xanthomonas campestris* resulting in excellent polymer formation is known in the art. (page 2, lines 26-28). R1 also teaches of a fermentation process wherein unhydrolyzed whey (acid or sweet) results in polymer formation and functionalization of the whey so that the whey product can be utilized as a food ingredient. (page 3, lines 5-10). The fermentation is carried out at a temperature from about 20C to 35C. (page 3, lines 10-14). The desired viscosity is usually reached within 48-72 hours (page 4, lines 6-8).

7. It is noted that xanthan gum is produced from lactose through the aerobic fermentation of *Xanthomonas campestris*. Therefore, dairy products or by products such as milk permeate, whey permeate or skim milk permeate containing lactose can be fermented for the production of xanthan gum. Enzymes such as lactase or galactosidase for hydrolyzing whey lactose are also known in the art.

8. R1 discloses the production of a high viscosity broth produced by fermentation techniques. The high viscosity broth may be dried and/or sterilized by autoclave plus lyophilization, spray drying or other techniques. (page 5, lines 22-24).

9. Given that the viscous broth is sterilized and dried, it is clear that the exopolysaccharide (xanthan gum) is not separated, as presently claimed, and is contained in a mixture of other components including the heat killed microorganisms.

10. R1 discloses that the functionalized whey product can be used as a food ingredient where milk solids and/or whey and/or thickeners and or stabilizers are used such as in ice cream, salad dressing, foam stabilizers, puddings, snack foods etc.

11. While R1 discloses the fermentation of lactose containing whey, using *Xanthomonas campestris*, for the production of functionalized whey product, R1 is silent regarding the use of lactic acid bacteria in the fermentation of whey (containing lactose)

12. R2 discloses the production of an exopolysaccharide containing whey protein concentrate by fermentation of whey.

13. R2 discloses the fermentation of lactose containing whey using *Lactobacillus delbrueckii ssp. bulgaricus* resulting in the production of exopolysaccharides (EPS) in the whey medium. (Abstract)

14. R2 discloses that their process is one approach to transform whey and lactose into value-added products. (page 3189, col. 2, second paragraph)

15. R2 also discloses that in processing and recovery of whey protein concentrates, the fermented medium is pasteurized to destroy the EPS-producing strain. Therefore, it is clear that the ferment is heat killed.

16. R2 is silent regarding the incorporation of whey product containing exopolysaccharides into cheese products.

17. R3 discloses a method of producing dairy spread wherein a cheese milk or cream or a combination is acid coagulated in the presence of suitable culture, wherein the culture comprises an exopolysaccharide producing lactic acid bacterium capable of reducing the graininess of the heat treated dairy spread.(Abstract)

18. R3 also discloses the production of fresh cheese wherein the cheese milk is acid coagulated in the presence of a suitable exopolysaccharide producing lactic acid bacterium which reduces the graininess of the fresh cheese.

19. Therefore, it is clear that exopolysaccharides are incorporated into cheese mixtures to reduce the graininess of the heat treated mixtures. Since the incorporation of whey products into cheese formulations and cheese making techniques were known in the art, at the time the invention was made, using exopolysaccharide containing whey in cheese milk and coagulating the mixture using proteolytic enzymes (e.g. rennin), as presently claimed, would be obvious to an artisan.

20. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the teachings of R1 and use a lactic acid bacterium capable of producing exopolysaccharides as disclosed by R2 and finally use the functionalized exopolysaccharide-containing whey in a processed cheese

formulation as disclosed by R3. The bacterial exopolysaccharide functions as a thickener, stabilizer or texture improving agent in the processed cheese product. Absent any evidence to contrary and based on the combined teachings of the cited references, there would have been a reasonable expectation of success in making a cheese product containing bacterial exopolysaccharides.

Response to Arguments

Applicants' arguments were considered. However, in light of the amendments made by Applicants, and the new grounds of rejections caused by such amendments, these arguments are deemed moot.

Conclusion

21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HAMID R. BADR whose telephone number is (571)270-3455. The examiner can normally be reached on M-F, 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hamid R Badr
Examiner
Art Unit 1794

/Keith D. Hendricks/
Supervisory Patent Examiner, Art Unit 1794